

1 Sub 5
2 1. An apparatus for recovering a failed database data set, the apparatus
3 comprising:

4 a memory device storing executable modules, the modules comprising:

5 a recovery utility having,

6 a backup copy restore utility configured to read and restore

7 a backup copy of the database data set,

8 a change accumulation manager configured to read a change
9 accumulation data set in parallel with the read and restore of the
10 backup copy to derive detail records, and

11 an image copy restore utility configured to apply the detail
12 records to the backup copy during the read and restore of the
13 backup copy to thereby create a restored database data set.

14 Sub 6
15 2. The apparatus of claim 1 wherein the backup copy restore utility is further
16 configured to read and restore a plurality of backup copies in parallel.

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18 3. The apparatus of claim 1 wherein the change accumulation manager is further
19 configured to read in parallel a plurality of change accumulation data sets to derive detail
20 records.
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1 4. The apparatus of claim 1 wherein the recovery utility further comprises a
2 merge end point utility configured to determine the merge end point reflective of a
3 separation of detail and spill records in the log.

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5 5. The apparatus of claim 1 wherein the recovery utility further comprises
6 a log manager configured to read a log to derive updates subsequent to a merge
7 end point, and
8 a database update manager configured to apply the updates to the restored
9 database data set.

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11 B 6. The apparatus of claim 5 wherein the log manager is further configured to read
12 a plurality of logs in parallel to derive updates subsequent to the merge end point.

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15 7. The apparatus of claim 5 wherein the database update manager is further
16 configured to apply the updates after the backup copy is restored.

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18 8. The apparatus of claim 1 further comprising a virtual memory and wherein the
19 change accumulation manager is further configured to store at least a portion of the detail
20 records in the virtual memory.
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1 B| 9. The apparatus of claim 1 wherein the backup copy restore utility is configured
2 to send a query to the change accumulation manager for a detail record associated with
3 the database data set during the read and restore of the backup copy.

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5 10. The apparatus of claim 9 wherein the change accumulation manager is
6 configured to save the query if the detail record has not yet been read by the change
7 accumulation manager and further configured to send the detail record to the image copy
8 restore process if the detail record has been read by the change accumulation manager.
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1 Sub
2 A5 11. A method for recovering a failed database data set, the method comprising:
3 reading and restoring a backup copy of the database data set;
4 reading a change accumulation data set in parallel with the reading and restoring
5 of the backup copy to derive detail records associated with the database data set; and
6 applying the detail records to the backup copy during the reading and restoring of
7 the backup copy to thereby create a restored database data set.

8 B1 12. The method of claim 11 further comprising reading and restoring a plurality
9 of backup copies in parallel, wherein the backup copies are associated with corresponding
10 failed database data sets.

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12 13. The method of claim 11 further comprising reading a plurality of change
13 accumulation data sets in parallel to derive detail records.

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15 14. The method of claim 11 further comprising reading a log to derive updates
16 subsequent to a merge end point and applying the updates to the restored database data
17 set.

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19 Sub
20 A6 15. The method of claim 14 wherein reading the log and applying the updates are
21 executed after restoring the backup copy.

1 B1 16. The method of claim 11 further comprising reading a plurality of logs in
2 parallel to derive updates subsequent to the merge end point and applying the updates to
3 the restored database data set.

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5 17. The method of claim 11 further comprising determining the merge end point,
6 wherein the merge end point is reflective of a separation of detail and spill records in the
7 log.

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9 18. The method of claim 11 further comprising storing at least a portion of the
10 detail records in a virtual memory.

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12 19. The method of claim 11 further comprising generating a query to prompt
13 for a detail record associated with the database data set.

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15 20. The method of claim 19 further comprising saving the query if the detail
16 record has not yet been read and responding to the query by applying the detail record to
17 the backup copy if the detail record has been read.
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1 ~~Sub A~~ 21. A computer readable medium having stored thereon computer executable
2 instructions for performing a method for recovering a failed database data, the method
3 comprising:

4 reading and restoring a backup copy of the database data set;
5 reading a change accumulation data set in parallel with the reading and restoring
6 of the backup copy to derive detail records associated with the database data set; and
7 applying the detail records to the backup copy simultaneously during the reading
8 and restoring of the backup copy to thereby create a restored database data set.

10 ~~B1~~ 23. The computer readable medium of claim 22 wherein the method further
11 comprises reading and restoring a plurality of backup copies in parallel, wherein the
12 backup copies are associated with corresponding failed database data sets.

14 24. The computer readable medium of claim 22 wherein the method further
15 comprises reading a plurality of change accumulation data sets in parallel to derive detail
16 records.

18 25. The computer readable medium of claim 22 wherein the method further
19 comprises reading a log to derive updates subsequent to a merge end point and applying
20 the updates to the restored database data set.
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1 Sub 1
AS 26. The computer readable medium of claim 25 wherein reading the log and
2 applying the updates are executed after restoring the backup copy.

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4 B1 27. The computer readable medium of claim 22 wherein the method further
5 comprises reading a plurality of logs in parallel to derive updates subsequent to the merge
6 end point and applying the updates to the restored database data set.

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8 28. The computer readable medium of claim 22 wherein the method further
9 comprises determining the merge end point, wherein the merge end point is reflective of a
10 separation of detail and spill records in the log.

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12 29. The computer readable medium of claim 22 wherein the method further
13 comprises storing at least a portion of the detail records in a virtual memory.

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15 30. The computer readable medium of claim 22 wherein the method further
16 comprises generating a query to prompt for a detail record associated with the database
17 data set.

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19 31. The computer readable medium of claim 30 wherein the method further
20 comprises saving the query if the detail record has not yet been read and responding to the
21 query by applying the detail record to the backup copy if the detail record has been read.